

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
2N-65W-22 Powers 2-22 Pad
POWERS 2G-27HZ**

Plan A

Plan: Permit Rev-2

Standard Planning Report

27 July, 2015

Project: WELD-NAD83-UTMFT13N
Site: 2N-65W-22 Powers 2-22 Pad
Well: POWERS 2G-27HZ
Wellbore: Plan A
Design: Permit Rev-2

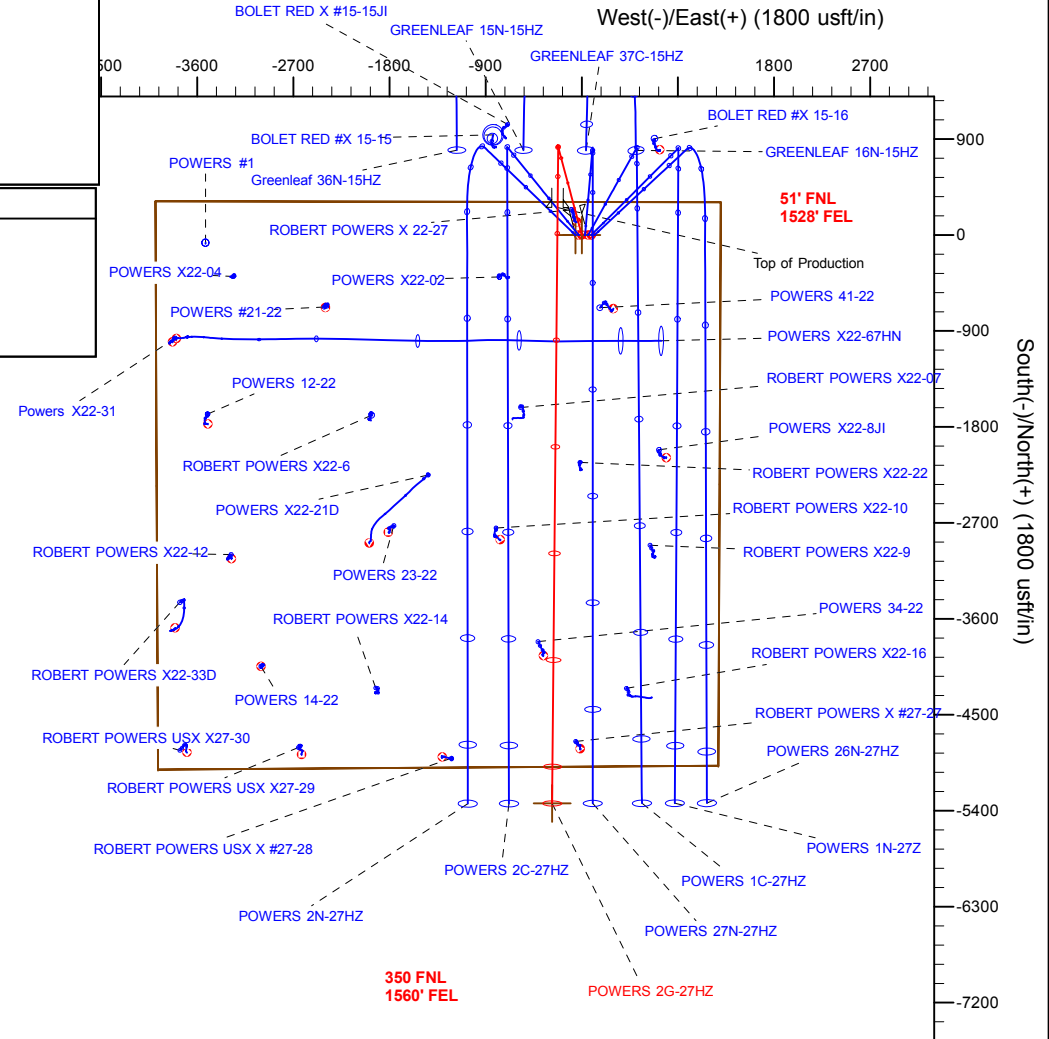
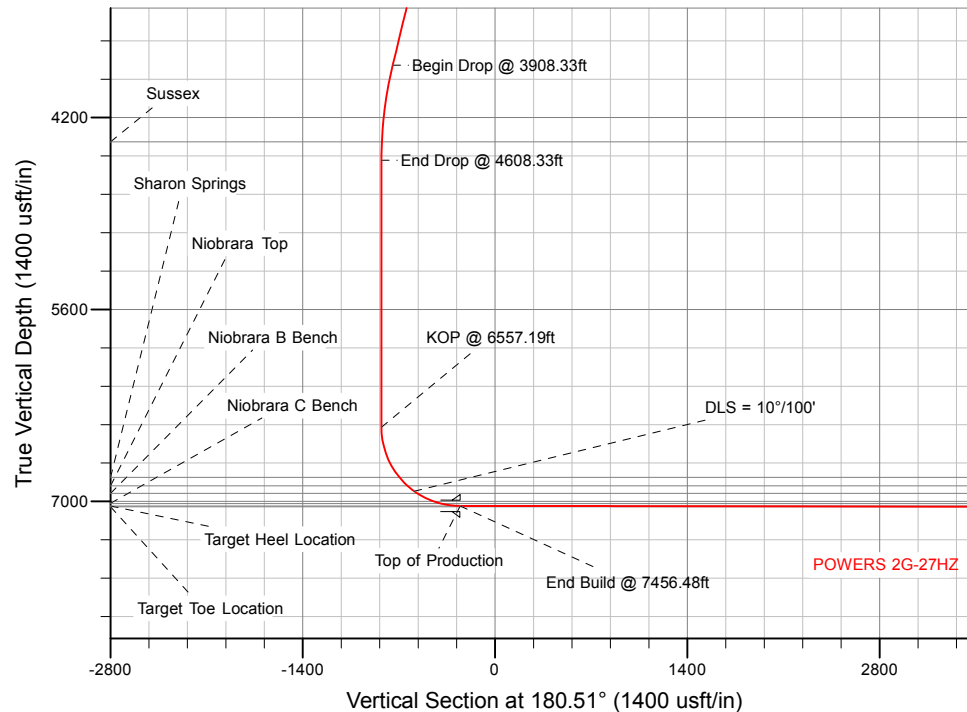
US ROCKIES WATTENBERG PLANNING

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	1183.33	14.00	345.00	1174.07	109.60	-29.37	1.50	345.00	-109.33	
4	3908.33	14.00	345.00	3818.13	746.37	-199.99	0.00	0.00	-744.56	
5	4608.33	0.00	0.00	4511.18	828.57	-222.01	2.00	180.00	-826.56	
6	6557.19	0.00	0.00	6460.04	828.57	-222.01	0.00	0.00	-826.56	
7	7456.48	89.93	180.51	7033.00	256.35	-227.10	10.00	180.51	-254.32	
8	13045.49	89.93	180.51	7040.00	-5332.44	-276.78	0.00	0.00	5334.69	POWERS 2G-27HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
POWERS 2G-27HZ_SHL	0.00	0.00	0.00	40.130530	-104.645295
POWERS 2G-27HZ_BHL	7040.00	-5332.44	-276.78	40.115887	-104.646285



WELL DETAILS: POWERS 2G-27HZ	
Ground Level:	4894.00
RKB = 17' @ 4911.00usft (D Rig)	
Plan: Permit Rev-2 (POWERS 2G-27HZ/Plan A)	
Created By: Clint Eshelman	Date: 7/27/2015
Reviewed: _____	Date: _____

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well POWERS 2G-27HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4911.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4911.00usft (D Rig)
Site:	2N-65W-22 Powers 2-22 Pad	North Reference:	True
Well:	POWERS 2G-27HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Project	WELD-NAD83-UTMFT13N		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		

Site		2N-65W-22 Powers 2-22 Pad			
Site Position:		Northing:	14,574,462.82 usft	Latitude:	40.130530
From:	Lat/Long	Easting:	1,739,503.03 usft	Longitude:	-104.645509
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.23 °

Well	POWERS 2G-27HZ					
Well Position	+N/-S	0.00 usft	Northing:	14,574,463.06 usft	Latitude:	40.130530
	+E/-W	59.82 usft	Easting:	1,739,562.84 usft	Longitude:	-104.645295
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,894.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/12/2015	8.30	66.73	52,625

Design	Permit Rev-2			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	180.51

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,183.33	14.00	345.00	1,174.07	109.60	-29.37	1.50	1.50	0.00	345.00	
3,908.33	14.00	345.00	3,818.13	746.37	-199.99	0.00	0.00	0.00	0.00	
4,608.33	0.00	0.00	4,511.18	828.57	-222.01	2.00	-2.00	0.00	180.00	
6,557.19	0.00	0.00	6,460.04	828.57	-222.01	0.00	0.00	0.00	0.00	
7,456.48	89.93	180.51	7,033.00	256.35	-227.10	10.00	10.00	-19.96	180.51	
13,045.49	89.93	180.51	7,040.00	-5,332.44	-276.78	0.00	0.00	0.00	0.00	POWERS 2G-27HZ_I

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well POWERS 2G-27HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4911.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4911.00usft (D Rig)
Site:	2N-65W-22 Powers 2-22 Pad	North Reference:	True
Well:	POWERS 2G-27HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2N-R65W-Sec. 22_Section Lines - POWERS 2G-27HZ_SHL									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 250.00ft									
300.00	0.75	345.00	300.00	0.32	-0.08	-0.32	1.50	1.50	0.00
400.00	2.25	345.00	399.96	2.84	-0.76	-2.84	1.50	1.50	0.00
500.00	3.75	345.00	499.82	7.90	-2.12	-7.88	1.50	1.50	0.00
600.00	5.25	345.00	599.51	15.48	-4.15	-15.44	1.50	1.50	0.00
700.00	6.75	345.00	698.96	25.57	-6.85	-25.51	1.50	1.50	0.00
800.00	8.25	345.00	798.10	38.18	-10.23	-38.09	1.50	1.50	0.00
900.00	9.75	345.00	896.87	53.29	-14.28	-53.16	1.50	1.50	0.00
1,000.00	11.25	345.00	995.19	70.89	-19.00	-70.72	1.50	1.50	0.00
1,100.00	12.75	345.00	1,093.00	90.98	-24.38	-90.76	1.50	1.50	0.00
1,183.33	14.00	345.00	1,174.07	109.60	-29.37	-109.33	1.50	1.50	0.00
End Nudge @ 1183.33ft									
1,200.00	14.00	345.00	1,190.25	113.49	-30.41	-113.22	0.00	0.00	0.00
1,300.00	14.00	345.00	1,287.27	136.86	-36.67	-136.53	0.00	0.00	0.00
1,400.00	14.00	345.00	1,384.30	160.23	-42.93	-159.84	0.00	0.00	0.00
1,500.00	14.00	345.00	1,481.33	183.59	-49.19	-183.15	0.00	0.00	0.00
1,600.00	14.00	345.00	1,578.36	206.96	-55.46	-206.46	0.00	0.00	0.00
1,700.00	14.00	345.00	1,675.39	230.33	-61.72	-229.77	0.00	0.00	0.00
1,800.00	14.00	345.00	1,772.42	253.70	-67.98	-253.08	0.00	0.00	0.00
1,828.42	14.00	345.00	1,800.00	260.34	-69.76	-259.71	0.00	0.00	0.00
9 5/8"									
1,900.00	14.00	345.00	1,869.45	277.07	-74.24	-276.39	0.00	0.00	0.00
2,000.00	14.00	345.00	1,966.48	300.43	-80.50	-299.70	0.00	0.00	0.00
2,100.00	14.00	345.00	2,063.51	323.80	-86.76	-323.02	0.00	0.00	0.00
2,200.00	14.00	345.00	2,160.54	347.17	-93.02	-346.33	0.00	0.00	0.00
2,300.00	14.00	345.00	2,257.57	370.54	-99.29	-369.64	0.00	0.00	0.00
2,400.00	14.00	345.00	2,354.60	393.90	-105.55	-392.95	0.00	0.00	0.00
2,500.00	14.00	345.00	2,451.63	417.27	-111.81	-416.26	0.00	0.00	0.00
2,600.00	14.00	345.00	2,548.66	440.64	-118.07	-439.57	0.00	0.00	0.00
2,700.00	14.00	345.00	2,645.69	464.01	-124.33	-462.88	0.00	0.00	0.00
2,800.00	14.00	345.00	2,742.72	487.38	-130.59	-486.19	0.00	0.00	0.00
2,900.00	14.00	345.00	2,839.75	510.74	-136.85	-509.51	0.00	0.00	0.00
3,000.00	14.00	345.00	2,936.78	534.11	-143.11	-532.82	0.00	0.00	0.00
3,100.00	14.00	345.00	3,033.81	557.48	-149.38	-556.13	0.00	0.00	0.00
3,200.00	14.00	345.00	3,130.84	580.85	-155.64	-579.44	0.00	0.00	0.00
3,300.00	14.00	345.00	3,227.87	604.22	-161.90	-602.75	0.00	0.00	0.00
3,400.00	14.00	345.00	3,324.90	627.58	-168.16	-626.06	0.00	0.00	0.00
3,500.00	14.00	345.00	3,421.93	650.95	-174.42	-649.37	0.00	0.00	0.00
3,600.00	14.00	345.00	3,518.95	674.32	-180.68	-672.68	0.00	0.00	0.00
3,700.00	14.00	345.00	3,615.98	697.69	-186.94	-696.00	0.00	0.00	0.00
3,800.00	14.00	345.00	3,713.01	721.05	-193.21	-719.31	0.00	0.00	0.00
3,900.00	14.00	345.00	3,810.04	744.42	-199.47	-742.62	0.00	0.00	0.00
3,908.33	14.00	345.00	3,818.13	746.37	-199.99	-744.56	0.00	0.00	0.00
Begin Drop @ 3908.33ft									
4,000.00	12.17	345.00	3,907.41	766.41	-205.36	-764.55	2.00	-2.00	0.00
4,100.00	10.17	345.00	4,005.51	785.12	-210.37	-783.21	2.00	-2.00	0.00
4,200.00	8.17	345.00	4,104.23	800.51	-214.49	-798.56	2.00	-2.00	0.00
4,300.00	6.17	345.00	4,203.45	812.56	-217.72	-810.58	2.00	-2.00	0.00
4,400.00	4.17	345.00	4,303.03	821.25	-220.05	-819.26	2.00	-2.00	0.00

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well POWERS 2G-27HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4911.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4911.00usft (D Rig)
Site:	2N-65W-22 Powers 2-22 Pad	North Reference:	True
Well:	POWERS 2G-27HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,473.10	2.70	345.00	4,376.00	825.48	-221.19	-823.48	2.00	-2.00	0.00	
Sussex										
4,500.00	2.17	345.00	4,402.88	826.59	-221.48	-824.58	2.00	-2.00	0.00	
4,600.00	0.17	345.00	4,502.85	828.56	-222.01	-826.55	2.00	-2.00	0.00	
4,608.33	0.00	345.00	4,511.18	828.57	-222.01	-826.56	2.00	-2.00	0.00	
End Drop @ 4608.33ft										
4,700.00	0.00	0.00	4,602.85	828.57	-222.01	-826.56	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,702.85	828.57	-222.01	-826.56	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,802.85	828.57	-222.01	-826.56	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,902.85	828.57	-222.01	-826.56	0.00	0.00	0.00	
5,100.00	0.00	0.00	5,002.85	828.57	-222.01	-826.56	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,102.85	828.57	-222.01	-826.56	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,202.85	828.57	-222.01	-826.56	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,302.85	828.57	-222.01	-826.56	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,402.85	828.57	-222.01	-826.56	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,502.85	828.57	-222.01	-826.56	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,602.85	828.57	-222.01	-826.56	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,702.85	828.57	-222.01	-826.56	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,802.85	828.57	-222.01	-826.56	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,902.85	828.57	-222.01	-826.56	0.00	0.00	0.00	
6,100.00	0.00	0.00	6,002.85	828.57	-222.01	-826.56	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,102.85	828.57	-222.01	-826.56	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,202.85	828.57	-222.01	-826.56	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,302.85	828.57	-222.01	-826.56	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,402.85	828.57	-222.01	-826.56	0.00	0.00	0.00	
6,557.19	0.00	0.00	6,460.04	828.57	-222.01	-826.56	0.00	0.00	0.00	
KOP @ 6557.19ft										
6,600.00	4.28	180.51	6,502.81	826.97	-222.03	-824.96	10.00	10.00	0.00	
6,700.00	14.28	180.51	6,601.38	810.86	-222.17	-808.85	10.00	10.00	0.00	
6,800.00	24.28	180.51	6,695.65	777.89	-222.46	-775.88	10.00	10.00	0.00	
6,900.00	34.28	180.51	6,782.76	729.04	-222.90	-727.03	10.00	10.00	0.00	
6,953.10	39.59	180.51	6,825.19	697.14	-223.18	-695.13	10.00	10.00	0.00	
Sharon Springs										
7,000.00	44.28	180.51	6,860.07	665.81	-223.46	-663.80	10.00	10.00	0.00	
7,037.73	48.05	180.51	6,886.19	638.60	-223.70	-636.59	10.00	10.00	0.00	
Niobrara Top										
7,100.00	54.28	180.51	6,925.22	590.12	-224.13	-588.10	10.00	10.00	0.00	
DLS = 10°/100'										
7,129.71	57.25	180.51	6,941.93	565.56	-224.35	-563.54	10.00	10.00	0.00	
Niobrara B Bench										
7,200.00	64.28	180.51	6,976.24	504.26	-224.90	-502.24	10.00	10.00	0.00	
7,300.00	74.28	180.51	7,011.57	410.85	-225.73	-408.83	10.00	10.00	0.00	
7,313.76	75.66	180.51	7,015.14	397.57	-225.85	-395.54	10.00	10.00	0.00	
Niobrara C Bench										
7,400.00	84.28	180.51	7,030.15	312.73	-226.60	-310.70	10.00	10.00	0.00	
7,456.48	89.93	180.51	7,033.00	256.35	-227.10	-254.31	10.00	10.00	0.00	
End Build @ 7456.48ft - Target Heel Location - Top of Production										
7,500.00	89.93	180.51	7,033.06	212.83	-227.49	-210.79	0.00	0.00	0.00	
7,600.00	89.93	180.51	7,033.18	112.83	-228.38	-110.79	0.00	0.00	0.00	
7,700.00	89.93	180.51	7,033.31	12.83	-229.27	-10.79	0.00	0.00	0.00	
7,800.00	89.93	180.51	7,033.43	-87.16	-230.15	89.21	0.00	0.00	0.00	
7,900.00	89.93	180.51	7,033.56	-187.16	-231.04	189.21	0.00	0.00	0.00	
8,000.00	89.93	180.51	7,033.68	-287.15	-231.93	289.21	0.00	0.00	0.00	

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well POWERS 2G-27HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4911.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4911.00usft (D Rig)
Site:	2N-65W-22 Powers 2-22 Pad	North Reference:	True
Well:	POWERS 2G-27HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
8,100.00	89.93	180.51	7,033.81	-387.15	-232.82	389.21	0.00	0.00	0.00	
8,200.00	89.93	180.51	7,033.93	-487.14	-233.71	489.21	0.00	0.00	0.00	
8,300.00	89.93	180.51	7,034.06	-587.14	-234.60	589.21	0.00	0.00	0.00	
8,400.00	89.93	180.51	7,034.18	-687.14	-235.49	689.21	0.00	0.00	0.00	
8,500.00	89.93	180.51	7,034.31	-787.13	-236.38	789.21	0.00	0.00	0.00	
8,600.00	89.93	180.51	7,034.43	-887.13	-237.26	889.21	0.00	0.00	0.00	
8,700.00	89.93	180.51	7,034.56	-987.12	-238.15	989.21	0.00	0.00	0.00	
8,800.00	89.93	180.51	7,034.68	-1,087.12	-239.04	1,089.21	0.00	0.00	0.00	
8,900.00	89.93	180.51	7,034.81	-1,187.12	-239.93	1,189.21	0.00	0.00	0.00	
9,000.00	89.93	180.51	7,034.93	-1,287.11	-240.82	1,289.21	0.00	0.00	0.00	
9,100.00	89.93	180.51	7,035.06	-1,387.11	-241.71	1,389.21	0.00	0.00	0.00	
9,200.00	89.93	180.51	7,035.19	-1,487.10	-242.60	1,489.21	0.00	0.00	0.00	
9,300.00	89.93	180.51	7,035.31	-1,587.10	-243.49	1,589.21	0.00	0.00	0.00	
9,400.00	89.93	180.51	7,035.44	-1,687.10	-244.38	1,689.21	0.00	0.00	0.00	
9,500.00	89.93	180.51	7,035.56	-1,787.09	-245.26	1,789.20	0.00	0.00	0.00	
9,600.00	89.93	180.51	7,035.69	-1,887.09	-246.15	1,889.20	0.00	0.00	0.00	
9,700.00	89.93	180.51	7,035.81	-1,987.08	-247.04	1,989.20	0.00	0.00	0.00	
9,800.00	89.93	180.51	7,035.94	-2,087.08	-247.93	2,089.20	0.00	0.00	0.00	
9,900.00	89.93	180.51	7,036.06	-2,187.08	-248.82	2,189.20	0.00	0.00	0.00	
10,000.00	89.93	180.51	7,036.19	-2,287.07	-249.71	2,289.20	0.00	0.00	0.00	
10,100.00	89.93	180.51	7,036.31	-2,387.07	-250.60	2,389.20	0.00	0.00	0.00	
10,200.00	89.93	180.51	7,036.44	-2,487.06	-251.49	2,489.20	0.00	0.00	0.00	
10,300.00	89.93	180.51	7,036.56	-2,587.06	-252.38	2,589.20	0.00	0.00	0.00	
10,400.00	89.93	180.51	7,036.69	-2,687.06	-253.26	2,689.20	0.00	0.00	0.00	
10,500.00	89.93	180.51	7,036.81	-2,787.05	-254.15	2,789.20	0.00	0.00	0.00	
10,600.00	89.93	180.51	7,036.94	-2,887.05	-255.04	2,889.20	0.00	0.00	0.00	
10,700.00	89.93	180.51	7,037.06	-2,987.04	-255.93	2,989.20	0.00	0.00	0.00	
10,800.00	89.93	180.51	7,037.19	-3,087.04	-256.82	3,089.20	0.00	0.00	0.00	
10,900.00	89.93	180.51	7,037.31	-3,187.04	-257.71	3,189.20	0.00	0.00	0.00	
11,000.00	89.93	180.51	7,037.44	-3,287.03	-258.60	3,289.20	0.00	0.00	0.00	
11,100.00	89.93	180.51	7,037.56	-3,387.03	-259.49	3,389.20	0.00	0.00	0.00	
11,200.00	89.93	180.51	7,037.69	-3,487.02	-260.38	3,489.20	0.00	0.00	0.00	
11,300.00	89.93	180.51	7,037.81	-3,587.02	-261.26	3,589.20	0.00	0.00	0.00	
11,400.00	89.93	180.51	7,037.94	-3,687.02	-262.15	3,689.20	0.00	0.00	0.00	
11,500.00	89.93	180.51	7,038.07	-3,787.01	-263.04	3,789.20	0.00	0.00	0.00	
11,600.00	89.93	180.51	7,038.19	-3,887.01	-263.93	3,889.20	0.00	0.00	0.00	
11,700.00	89.93	180.51	7,038.32	-3,987.00	-264.82	3,989.20	0.00	0.00	0.00	
11,800.00	89.93	180.51	7,038.44	-4,087.00	-265.71	4,089.20	0.00	0.00	0.00	
11,900.00	89.93	180.51	7,038.57	-4,187.00	-266.60	4,189.20	0.00	0.00	0.00	
12,000.00	89.93	180.51	7,038.69	-4,286.99	-267.49	4,289.20	0.00	0.00	0.00	
12,100.00	89.93	180.51	7,038.82	-4,386.99	-268.38	4,389.20	0.00	0.00	0.00	
12,200.00	89.93	180.51	7,038.94	-4,486.98	-269.26	4,489.20	0.00	0.00	0.00	
12,300.00	89.93	180.51	7,039.07	-4,586.98	-270.15	4,589.20	0.00	0.00	0.00	
12,400.00	89.93	180.51	7,039.19	-4,686.98	-271.04	4,689.20	0.00	0.00	0.00	
12,500.00	89.93	180.51	7,039.32	-4,786.97	-271.93	4,789.20	0.00	0.00	0.00	
12,600.00	89.93	180.51	7,039.44	-4,886.97	-272.82	4,889.20	0.00	0.00	0.00	
12,700.00	89.93	180.51	7,039.57	-4,986.96	-273.71	4,989.20	0.00	0.00	0.00	
12,800.00	89.93	180.51	7,039.69	-5,086.96	-274.60	5,089.20	0.00	0.00	0.00	
12,900.00	89.93	180.51	7,039.82	-5,186.96	-275.49	5,189.20	0.00	0.00	0.00	
13,000.00	89.93	180.51	7,039.94	-5,286.95	-276.38	5,289.20	0.00	0.00	0.00	
13,045.49	89.93	180.51	7,040.00	-5,332.44	-276.78	5,334.69	0.00	0.00	0.00	
TD Well @ 13045.49ft - Target Toe Location - POWERS 2G-27HZ_BHL										

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well POWERS 2G-27HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4911.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4911.00usft (D Rig)
Site:	2N-65W-22 Powers 2-22 Pad	North Reference:	True
Well:	POWERS 2G-27HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
2N-R65W-Sec. 22_Secti	0.00	0.00	0.00	0.00	-59.82	14,574,462.82	1,739,503.03	40.130530	-104.645509
- plan misses target center by 59.82usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			0.00	316.49	-3,930.62	14,574,763.62	1,735,571.17		
Point 2			0.00	307.64	1,360.81	14,574,775.89	1,740,862.60		
Point 3			0.00	-2,335.49	1,350.05	14,572,132.74	1,740,862.39		
Point 4			0.00	-4,979.02	1,338.74	14,569,489.18	1,740,861.62		
Point 5			0.00	-5,015.26	-3,908.08	14,569,432.01	1,735,614.99		
Point 6			0.00	-2,350.00	-3,919.44	14,572,097.20	1,735,592.99		
POWERS 2G-27HZ_SH	0.00	0.00	0.00	0.00	0.00	14,574,463.06	1,739,562.84	40.130530	-104.645295
- plan hits target center									
- Point									
POWERS 2G-27HZ_BH	0.00	0.00	7,040.00	-5,332.44	-276.78	14,569,129.56	1,739,307.34	40.115887	-104.646285
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth			Casing Diameter	Hole Diameter
(usft)	(usft)		Name	(")	(")
1,828.42	1,800.00	9 5/8"		9-5/8	13-1/2
7,456.48	7,033.00	Top of Production		5-1/2	7-7/8

Formations						
Measured Depth	Vertical Depth				Dip	Dip Direction
(usft)	(usft)	Name	Lithology		(°)	(°)
4,473.10	4,376.00	Sussex			0.00	
6,953.10	6,825.19	Sharon Springs			0.00	
7,037.73	6,886.19	Niobrara Top			0.00	
7,129.71	6,941.93	Niobrara B Bench			0.00	
7,313.76	7,015.14	Niobrara C Bench			0.00	
7,456.48	7,033.00	Target Heel Location			0.00	
13,045.49	7,040.00	Target Toe Location			0.00	

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(usft)	(usft)	+N/-S	+E/-W	Comment	
(usft)	(usft)	(usft)	(usft)		
250.00	250.00	0.00	0.00	Begin Nudge @ 250.00ft	
1,183.33	1,174.07	109.60	-29.37	End Nudge @ 1183.33ft	
3,908.33	3,818.13	746.37	-199.99	Begin Drop @ 3908.33ft	
4,608.33	4,511.18	828.57	-222.01	End Drop @ 4608.33ft	
6,557.19	6,460.04	828.57	-222.01	KOP @ 6557.19ft	
7,100.00	6,925.22	590.12	-224.13	DLS = 10"/100'	
7,456.48	7,033.00	256.35	-227.10	End Build @ 7456.48ft	
13,045.49	7,040.00	-5,332.44	-276.78	TD Well @ 13045.49ft	